

**PHASE-LOCKED LOOP STRUCTURES**  
**WITH ENHANCED SIGNAL STABILITY**

**ABSTRACT OF THE DISCLOSURE**

Phase-locked loop structures are provided that facilitate enhanced stability of loop-generated signals. They include an oscillator network, a feedback loop and a controller. The oscillator network generates a loop output signal with a frequency that varies in response to a control voltage and to a frequency-determining parameter, the feedback loop generates the control voltage in response to the loop output signal and a reference signal and the controller increments the frequency-determining parameter to maintain the control voltage within a predetermined control-voltage range. These structures enhance signal stability by facilitating the use of low-gain oscillator structures and they simplify and shorten loop operations because the structures operate in a closed-loop condition at all times.